



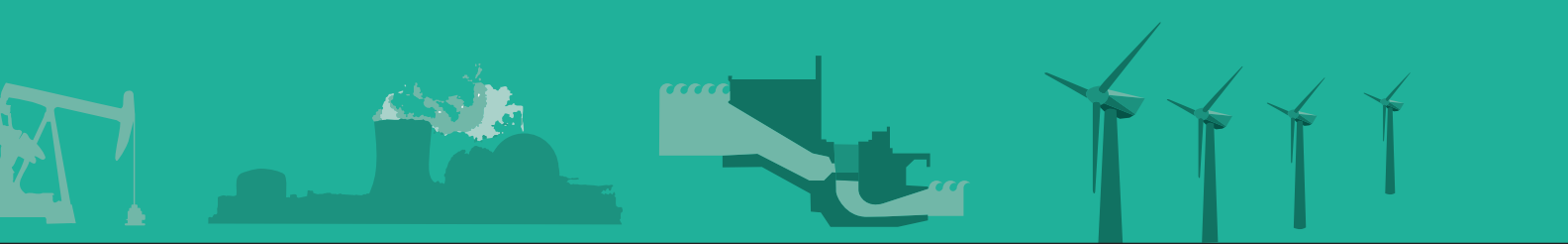
Chapter 1 Dreams of Limitless Energy

When was the last time you felt the urge to go out with a friend and grab a snack? For some Canadians, this means hopping in the car and heading to a fast-food restaurant. Burgers, fries, and soft drinks are among the most popular choices on the drive-through menu. One issue associated with eating fast food is that its high-calorie content may upset an individual's daily balance between energy intake and energy output.

You may be surprised to know that other things, not only the food, make going to the drive-through an energy-consuming activity. The food industry is dependent upon petroleum used to grow, process, and ship the food to the restaurant. Petroleum is also used during the production of all the food wrappers and containers that are later thrown away. And don't forget the petroleum used to run the vehicle that takes you to the drive-through window.

In this chapter you will analyze patterns of energy consumption in the modern world. You will explore the inner workings of some technologies that transform energy from natural sources into forms available for everyday use. You will then focus on fossil fuels as a major source of energy for generating electricity and fueling automobiles. Finally, you will consider the use of nuclear energy as a possible alternative to the combustion of fossil fuels.





Try This Activity

Electric Hand Dryer Versus Paper Towel

Restaurants may have washrooms equipped with an electric hand dryer or paper towels for drying your hands. If you managed a restaurant and wanted to be conscious of energy use, which method of drying hands would you make available for employees and customers?

Purpose

You will identify and consider the advantages and disadvantages of two methods used for drying hands.

Procedure

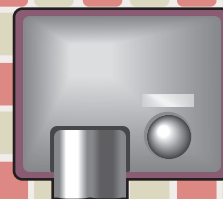
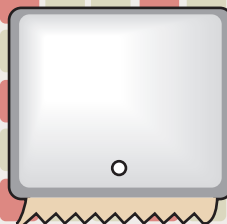
Obtain the “Hand-Drying Methods” handout from the Science 30 Textbook CD. For each criteria listed in the table, determine whether the hand-drying method is an advantage or a disadvantage. You may do this individually or as a group.



Science Skills

✓ Analyzing and Interpreting

All employees must wash their hands before returning to work.



Analysis

1. Identify which hand-drying method is preferred based on the table you completed in the handout.
2. Use the information in the following table to evaluate each method for drying hands based on cost. Based on this information, which method is preferred?

Description	Energy per Use (kJ)	Cost per 1000 Uses
non-recycled paper towel	743	\$23
recycled paper towel	460	\$23
standard electric dryer	222	\$1.47
low-temperature, high-wind dryer	76	\$0.50

3. Was the preferred method identified in question 1 different from the one identified in question 2? If so, consider all factors and state the preferred method for drying hands.
4. Explain why paper towels use so much more energy than electric hand dryers.
5. Use the list of perspectives on page 590 to identify the perspectives represented by each aspect listed in the Criteria column of the table in the handout.
6. In this situation, the environmental and economic perspectives are in agreement. The more environmentally friendly choice is also more economical. Give an example of an issue where the environmental and economic perspectives clash.